

Message

From: G D Beckett [g.d.beckett@aquiver.com]
Sent: 8/14/2019 6:03:01 PM
To: Ronald Chinn [ron.chinn@innovex.net]; Tu, Lyndsey [Tu.Lyndsey@epa.gov]
CC: Donald Thomas [dthomas@soest.hawaii.edu]; Grange, Gabrielle Fenix [gabrielle.grange@doh.hawaii.gov]; Ichinotsubo, Lene K [lene.ichinotsubo@doh.hawaii.gov]; Matt Tonkin [matt@sspa.com]; Myers, Hugh [hugh.myers@doh.hawaii.gov]; Shalev, Omer [Shalev.Omer@epa.gov]; Whittier, Robert [Robert.Whittier@doh.hawaii.gov]
Subject: LNAPL Source Term Discussion - Framing Questions

Hi folks,

In advance of our call, I thought I would jot down some of the key questions that directly affect risk estimates as a function of LNAPL transport behavior and the dependent g.w. chemical transport in the aquifer system. Perhaps it can help frame our discussion a bit. These all stem from the simple observation that transport is first driven by the nature of the release followed by transport controlled by flow physics and the associated multiphase parameterization.

1. Are the range/volumes of releases in the Navy's G.W. Protection document in alignment with what Hugh, Phil & others concur covers the probable range?
2. Are releases buffered by concrete tank vaulting before they enter the subsurface, and if so, to what degree?
3. Is this, in general, a capillarity influenced system or are voids/fractures sufficiently large to present limited capillary effects (or a combo)?
4. Are we in a setting that has the potential for high dilution/dissipation of LNAPL generated impacts in groundwater?
5. Are we in a setting where LNAPL transport is likely rapid and highly variable, or are we in a well-behaved system where we can reasonably anticipate impacts and plan responses accordingly?
6. Are the multiphase parameters controlling transport adequately characterized and what are key differences between each HSU and the expected behavior?
7. Is the relationship between a pumping zone of capture and LNAPL capture reasonably well understood, and does the g.w. model match field observations of capture?

There are a lot more granular questions to ask and answer, but this might help frame our uncertainty in various source-term approaches and help us to define how we can apply adequate conservatism to be protective of the groundwater resource.

Best regards

G.D. Beckett, RG, CHg

Principal Hydrogeologist
AQUI-VER, Inc.
6871 North 2200 West, 8F
Park City UT 84098
Wk - 435 655-8024
Fx - 435 655-8026

CONFIDENTIALITY STATEMENT: This electronic message contains information from AQUI-VER, Inc. and may be confidential or privileged work/communication products. The information is intended solely for the use of the individual(s) or entity(ies) named above. If you have received this e-mail in error, please notify us by telephone at (435) 655-8024 or by e-mail reply and then please delete this message. Thank you.

>>> TU, LYNDSEY<Tu.Lyndsey@epa.gov> 8/12/2019 9:28 AM >>>

Hi Ron,

Are you available for the times DOH mentioned this week for a call on LNAPL?

Thanks

From: Matt Tonkin [mailto:matt@sspa.com]
Sent: Friday, August 09, 2019 4:12 PM
To: Grange, Gabrielle Fenix <gabrielle.grange@doh.hawaii.gov>; TU, LYNDSEY <Tu.Lyndsey@epa.gov>; Shalev, Omer <Shalev.Omer@epa.gov>
Cc: G D Beckett <g.d.beckett@aquiver.com>; Myers, Hugh <hugh.myers@doh.hawaii.gov>; Donald Thomas <dthomas@soest.hawaii.edu>; Whittier, Robert <Robert.Whittier@doh.hawaii.gov>; Ichinotsubo, Lene K <lene.ichinotsubo@doh.hawaii.gov>
Subject: Re: LNAPL Source Term Discussion - DOH Call Availabilities 8/14-15, 8 am-12 noon HST or 8/13 11-12 noon

Actually I'm pretty open next week thank heavens for once! I'm good pretty much until 4 or 5 central all days

Matthew J. Tonkin

S.S. Papadopoulos & Assoc., Inc.

505 N. Pine St., Williamsfield, IL 61489-9517

Web: www.sspa.com // Email: matt@sspa.com // Skype: mattsspa

Office: (309) 616 9060 // Cell: (508) 815-9886

PRIVILEGED AND CONFIDENTIAL: This email and any attachments are intended only for the addressee(s) and may be confidential, proprietary, privileged, or otherwise protected by law from disclosure or use by a third party. If you are not the intended recipient, please delete this message and its attachments, and destroy any electronic or hard copies that you may have created. Thank you.

From: Grange, Gabrielle Fenix <Gabrielle.Grange@doh.hawaii.gov>

Sent: Friday, August 9, 2019 5:24:26 PM

To: TU, LYNDSEY <TU.Lyndsey@epa.gov>; Shalev, Omer <Shalev.Omer@epa.gov>

Cc: G D Beckett <g.d.beckett@aquiver.com>; Myers, Hugh <hugh.myers@doh.hawaii.gov>; Donald Thomas <dthomas@soest.hawaii.edu>; Whittier, Robert <Robert.Whittier@doh.hawaii.gov>; Ichinotsubo, Lene K <lene.ichinotsubo@doh.hawaii.gov>; Matt Tonkin <matt@sspa.com>

Subject: LNAPL Source Term Discussion - DOH Call Availabilities 8/14-15, 8 am-12 noon HST or 8/13 11-12 noon

Sorry for the delay in responding - lots of non-Red Hill activities afoot this week!

Best times for our technical team next week are Wednesday and Thursday, 8/14 or 8/15 anytime between 8 am – 12 noon. If those don't work, we could squeeze in an 11 am – noon call on Tuesday, 8/13. I'm copying Matt as well as I believe it is his schedule that may be the driver.

Fenix

From: Grange, Gabrielle Fenix

Sent: Wednesday, August 7, 2019 9:27 AM

To: TU, LYNDSEY <TU.Lyndsey@epa.gov>

Subject: RE: LNAPL Call Availability

Thanks. I will get back to you shortly.

Fenix

From: TU, LYNDSEY <TU.Lyndsey@epa.gov>

Sent: Wednesday, August 7, 2019 8:59 AM

To: Grange, Gabrielle Fenix <Gabrielle.Grange@doh.hawaii.gov>

Subject: LNAPL Call Availability

Hi Fenix,

Just checked in with everyone's calendars, it does not seem like this week will work well at this point. Next week Tu-Thurs is actually what works best for everyone. Would prefer morning Hawaii time, but otherwise everyone seems open for those dates.

Thanks

Lyndsey Tu

Underground Storage Tanks Program

Land Division, U.S. EPA Pacific Southwest
Tu.Lyndsey@epa.gov | 415-972-3269